

CORRESPONDENCE

An "Occult Food Sense" in Birds.

EDITOR OF 'THE AUK':

Articles dealing with the subject of instincts or intelligence in birds or in mammals have for me a peculiar fascination and are read with much interest. Mr. Beck's article in 'The Auk,' on 'The occult senses in birds,' proved no exception.

The scene pictured by the author was vividly visualized as I continued to read the well written lines. The crisp morning, the music of the speeding hounds, the tingle of eagerness and the keen expectation of the early hunters—then the puzzling change in the whole scene and the end of a stirring fox chase in the prosaic killing of a mad dog.

But with mind absorbed in the captivating account I am still dimly conscious of another scene, which persists in intruding upon the first. High overhead, on motionless wing, soar two black birds, mere specks in the uncertain light. Greater vision would have revealed them as vultures keenly intent upon the drama below, all-hearing, all-observing; but they themselves unobserved, unheard. When the last echo of the gun and the last whimper of disappointed hound and the last sound of human voice had passed away, and all was silent and restored to its wonted order, they began to descend. Rapidly, as they drew near the earth, their sharp eyes and tenacious avian memories which so often before had unerringly guided them on similar missions, led them now into close proximity of the very spot where that something had taken place, which merited their searching investigation. In a time that was incredibly short from the human viewpoint their marvelous eyesight, assisted now by—yes, by a degree of smelling power and also by a "resourcefulness" peculiar to such as are accustomed to seek the necessities of life in many different situations—they soon found themselves before the banquet hall, or, more precisely, the banquet hole.

It may be, however, that after all it was not these particular two birds, for the mental picture is more or less blurred and obscured by a second one, of a pair of vultures soaring above the South Mountain, taking their morning constitutional in sweeping circles that measured their radii—I had almost said in miles—who caught the sound of hound and gun on the still morning air, and "understood."

Now, the whole point I wish to make by all this rambling is, merely, that it seems to me quite unnecessary to call forth an "occult food sense" in order to explain the phenomenon described by the author of the above mentioned article. On the evidence there presented it is not at all clear that the case can not be explained by the operation of senses that are

well known and are possessed by birds as well as by most other animals. While the author, in his analysis of the case, has apparently to his own satisfaction eliminated the question of sight and of smell, he seems to have overlooked the application of a third highly developed faculty, that of hearing, to which reference had already been made, in a general way, in his first paragraph.

One need look no further, it seems to me, than to the remarkably developed functions of sight and hearing in order to arrive at a tenable explanation of the first essential and striking phase of the observation made by Mr. Beck, namely, the coming of the vultures so soon and apparently from nowhere, to the scene of action. The hunters, intent upon the chase, had no thought, most likely, for such things as vultures which even at the very time may have been within the range of the men's vision, or, if not, were at no greater distance than was well within the limits of their own superior senses. Whether seen or heard by the birds the action below was beyond doubt sufficient to bring them nearer the scene, for to respond to such and similar stimuli, signals if you please, we may well believe is a function of their inherited instincts.

And what reason have we to believe that to their well attuned ears the sound of "the voices of the hounds on the twisted night track" was not audible, even from their aerial pathway above the South Mountain? It has been shown, I believe, if my memory serves me aright, from experiments in acoustics, that the voice of the dog possesses a remarkable carrying quality, perhaps greater than that of any other domestic animal, and that it is the last animal sound that the aviator hears in ascending to a great height. It may safely be assumed, therefore, that to certain birds, especially such as the vultures and other birds of prey, the sound is audible to a very much greater distance than we ourselves are able to appreciate, with our limited powers.

Having in the first phases of the phenomenon been directed by either the auditory or the visual sense, or for that matter by both, after having reached the ground it may with sound reason be presumed that a little search, their sharp eyes now ably assisted by some degree of olfactory sense, would soon reveal the object of their quest. The time element, which was three hours or more, seems to me entirely adequate, even should the birds have come all the way from their roosting place on the slope of South Mountain.

As to the analogies drawn by the author from insect life, with respect to a "mating sense," the evidence brought forward seems, in my humble opinion, entirely to lack force even in a "contributive" way, so far as it suggests the existence of a sense different in kind from those which are well known to be present in insects and which have been scientifically proved beyond peradventure. The olfactory sense, if I mistake not, is generally recognized by entomologists as the dominant sense among insects. The degree of refinement it here attains and its "differentiative

capacity" are alike of an order difficult for man to appreciate. But so far as known the difference is one rather of degree than of kind. Applied to the case of the wasp, *Pelecinus*, is not the established olfactory sense sufficient to explain how the elusive males can find the females, thus being drawn forth from their retirement, probably from no such great distances as we may sometimes be led to imagine, and revealing themselves to the comparatively dull visual faculties of the naturalist? Every hunter has experienced a parallel case, hardly less striking, in the magical appearance of swarms of blowflies which arrive to "inspect" his game almost as soon as it is dead. It cannot be seriously questioned, I believe, that the highly refined olfactory sense is adequate to account for all this, and that it is the same in kind as that which brings the bear to the bait from afar and enables the dog to trail his master through the crowded street.

It is not the intention to deny the possible existence in animal life of other senses than the orthodox five that come within the pale of human experience; far from it. That the "homing sense" is a sixth one may well be true. When we shall have learned more about the functions of all parts of the internal ear and shall have added something more definite to our knowledge of what has been called "muscle sense," then this question may possibly be answered with a degree of assurance. While freely admitting the attractiveness and stimulating effect of formulating working hypotheses and theories, the point I wish to emphasize is simply that we should first of all exhaust the explanatory possibilities of the scientifically proven sense functions, in the analysis of observed phenomena where matters of this nature are involved, before proceeding to draw from the realm of the unknown. On the evidence adduced I feel that this procedure has not been followed in the case of the two vultures, and that the assumption of the existence of an "active sense which may be called 'occult'" even "simply because it is hidden from the experience and understanding of man," is not justified.

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The Search for Food by Birds.

EDITOR OF 'THE AUK':

The following remarks suggest interpretations that may be placed upon observations, different from those associated with them by Messrs. Beck and Grinnell in 'The Auk' for January, 1920 (pp. 55-59 and pp. 84-88). In the former article, an occult sense is invoked to account for Turkey Vultures finding the carcass of a mad dog thrown out of sight in a sinkhole by fox hunters. From evidence given in the article, there can be no certainty that the entire performance of killing the dog and throwing it in the hole was not watched by buzzards. Had some of the